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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/821,473	03/29/2001	Shunpei Yamazaki	SEL-137 DIV	5476

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EXAMINER

- LEE, HSIEN MING -

ART UNIT	PAPER NUMBER
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2823

DATE MAILED: 05/10/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/821,473

Applicant(s)

YAMAZAKI ET AL.

Examiner

Hsien-Ming Lee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 29-55 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 47-53 is/are allowed.
- 6) ☒ Claim(s) 29-46, 54 and 55 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/378,152.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. The objection to specification and double patenting rejection under 35 U.S.C. 101 are withdrawn in response to applicants' amendment filed 2/19/02.

#### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 54 recites the limitation "the first and second masks" in line 2. There is insufficient antecedent basis for this limitation in the claim.

#### *Double Patenting*

4. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

5. Claims 29-46, 54 and 55 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 18-19, 21, 23-28 of U.S. Patent No. 6,246,070 in view of Zhang et al. (US 6,124,155).

U.S. Patent No. 6,246,070 teaches a method of fabricating an EL display device, wherein claims 18, 23-25 and 21 of the Patent are substantially identical to claims 29-33 of the instant invention; and claims 19, 21, 26-28 of the Patent are substantially identical to claims 34-38 of the

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instant invention. The differences between the Patent and the invention are that : (a) the Patent teaches forming a gate insulating film and an initial semiconductor film into a laminate sequentially, whereas the invention teaches forming a gate insulating film and an amorphous semiconductor film into a laminate sequentially ; and (b) the Patent teaches providing a trivalent or pentavalent impurity element into second portion of the crystalline semiconductor film through the oxide film, whereas the invention teaches providing an impurity element into second portion of the crystalline semiconductor film through the oxide film.

Zhang et al. in an analogous art of fabricating TFT liquid-crystal display teach : (a) forming a gate wiring 3 on an insulating surface 2; forming a gate insulating film 4 and an amorphous semiconductor film 5 into a laminate sequentially without exposing them to an atmosphere on the gate wiring 3; irradiating the amorphous semiconductor film 5 with a laser to crystallize the amorphous semiconductor film into a crystalline semiconductor film ( Figs. 1(a0-1(b)) and col. 2, line 34 through col. 3, line 54).

Therefore, it would have been one of the ordinary skill in the art at the time of the invention was made to appreciate that the initial semiconductor film of the Patent can be the amorphous semiconductor film as evidenced by Zhang et al., since the amorphous semiconductor film can be fabricated relatively easily by a vapor phase process at a low temperature and they can be readily obtained by mass production, which would reduce manufacturing costs of the EL display device.

As far as the impurity element of the invention is concerned, obviously, the trivalent or pentavalent impurity element of the Patent can be considered "an impurity element."

Regarding newly added claims 39 and 43, Zhang et al. teach utilizing the laser light.

Regarding newly added claims 40 and 44, the Patent teaches the impurity is either the trivalent or pentavalent impurity.

Regarding newly added claims 41, 45 and 54, organic material, silicon oxide, silicon nitride and silicon nitride oxide are well-known mask materials.

Regarding newly added claims 42, 46 and 55, the Patent teaches the EL display device is combination with an electronic apparatus, wherein the electronic apparatus is one selected from the group consisting of a video camera, a digital camera, a projector, a goggle display, a navigation system for vehicles, a personal computer and a portable information terminal ( claim 17 of the Patent). In fact, claims 42 and 55 are duplicate claim.

*Allowable Subject Matter*

6. Claims 47-53 are allowed.

7. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record, Zhang et al. to US 6,124,155, in an analogous art of fabricating TFT liquid-crystal display teaches : (a) forming a gate wiring 3 on an insulating surface 2; forming a gate insulating film 4 and an amorphous semiconductor film 5 into a laminate sequentially without exposing them to an atmosphere on the gate wiring 3; irradiating the amorphous semiconductor film 5 with a laser to crystallize the amorphous semiconductor film into a crystalline semiconductor film ( Figs. 1(a)-1(b)) and col. 2, line 34 through col. 3, line 54).

By contrast, the prior art neither teaches nor suggests (a) providing an impurity element into second portions of the crystalline semiconductor film at a first concentration through the oxide film using the first mask; (b) providing the impurity element into third portions of the crystalline semiconductor film at a second concentration through the oxide film using a second

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mask, wherein the second concentration is higher than the first concentration, wherein the first portion of the crystalline semiconductor film is a channel forming region while the third portions of the crystalline semiconductor film are source and drain regions and wherein fourth portions of the crystalline semiconductor film which are not provided with the impurity at the second concentration but only the first concentration are low concentration impurity regions.

*Conclusion*

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hsien-Ming Lee whose telephone number is 703-305-7341. The examiner can normally be reached on M-F (9:00 ~ 5:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 703-308-4918. The fax phone numbers for the

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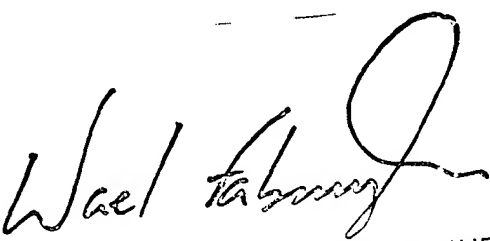
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organization where this application or proceeding is assigned are 703-305-0142 for regular communications and 703-305-0142 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.



Hsien Ming Lee  
May 7, 2002



SUPERVISORY PRIMARY EXAMINER  
TECHNOLOGY CENTER 2800